Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

3600: Research, Development, Test & Evaluation, Air Force

PE 0207412F: Control and Reporting Center (CRC)

BA 7: Operational Systems Development

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	18.688	52.177	58.313	0.000	58.313	64.815	67.203	68.091	21.318	Continuing	Continuing
67485L: Theater Air Control System Imp (TACSI)	18.688	3.517	4.957	0.000	4.957	1.967	5.350	2.944	0.562	Continuing	Continuing
675294: Theater Air Control System Improvement - Radar (TACSI-R)	0.000	48.660	53.356	0.000	53.356	62.848	61.853	65.147	20.756	Continuing	Continuing

A. Mission Description and Budget Item Justification

This budget activity funds development of mobile ground-based command and control (C2) capabilities of the Control and Reporting Center (CRC) program. The CRC is identified as a component of the Integrated Air Missile Defense Family of Systems that defends the Homeland and US national interests at home and abroad by negating an adversary's ability to achieve adverse effects from their air and missile capabilities. The CRC mission is to provide battlespace awareness and tactical battle management command and control (BMC2) in an assigned area. It is a ground-based theater air control system (TACS) surveillance and BMC2 element. It consists of facilities, equipment, and people and is a tailorable, modular, transportable, sustainable and persistent weapon system employed at the tactical level to support air and surface operations. Currently, the CRCs are fully employed in Operations IRAQI FREEDOM, ENDURING FREEDOM, and NOBLE EAGLE.

The CRC projects include development and modernization of Theater Air Control Systems Improvement (TACSI) capabilities and the Three-Dimensional Expeditionary Long-Range Radar (3DELRR). TACSI efforts include, but are not limited to the AN/TYQ-23 Operations Module (OM), AN/TPS-75 Long-Range Surveillance Radar and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS) that may be tasked across the full range of military operations. AN/TYQ-23 OM is a low source/high demand (LS/HD) deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace visualization necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based BMC2 operators located in the OM of the CRC. The AN/TRC-215 is typically deployed to a remote area which can extend the CRCs radio coverage beyond line of sight (BLOS) using organic SATCOM capabilities.

The 3DELRR program is developing a replacement for the current legacy AN/TPS-75 radar. 3DELRR will be the principal USAF long-range, ground-based sensor for detecting, identifying, tracking, and reporting aircraft and missiles in support of the Joint Forces Air Component Commander (JFACC) through the Ground Theater Air Control System (GTACS). The primary mission of the 3DELRR will be to provide long-range surveillance, control of aircraft, theater ballistic missile detection and Combat Identification (CID). The 3DELRR will respond to the operational need to detect and report highly maneuverable, small radar cross section targets to

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

3600: Research, Development, Test & Evaluation, Air Force

PE 0207412F: Control and Reporting Center (CRC)

BA 7: Operational Systems Development

enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. Ongoing planning and associated activities will take place to prevent and overcome diminishing manufacturing sources and obsolescence issues as required.

The program is in Budget Activity 7 because it provides funding for the modernization of currently existing and operating systems.

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	18.688	52.508	0.000	0.000	0.000
Current President's Budget	18.688	52.177	58.313	0.000	58.313
Total Adjustments	0.000	-0.331	58.313	0.000	58.313
 Congressional General Reductions 		-0.331			
 Congressional Directed Reductions 		0.000			
 Congressional Rescissions 	0.000	0.000			
 Congressional Adds 		0.000			
 Congressional Directed Transfers 		0.000			
Reprogrammings	0.000	0.000			
SBIR/STTR Transfer	0.000	0.000			
Other Adjustments	0.000	0.000	58.313	0.000	58.313

Change Summary Explanation

- Beginning in FY10, funding for 3DELRR Program was realigned to new BPAC 675294 from BPAC 67485L, within PE 0207412F.
- The Department of Defense Appropriations Act for FY2010 (signed 19 Dec 09), established a -\$15M rescission in FY09 RDT&E funding within PE 0207412F.

Exhibit R-2A, RDT&E Project Just	t ification: Pl	B 2011 Air F	orce						DATE : Feb	ruary 2010	
APPROPRIATION/BUDGET ACTIV 3600: Research, Development, Tes BA 7: Operational Systems Develop	t & Evaluatio	n, Air Force			I OMENCLA 2F: Control a	TURE and Reportin	g Center	PROJECT 67485L: Th (TACSI)			Imp
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate		Cost To Complete	Total Cost
67485L: Theater Air Control System Imp (TACSI)	18.688	3.517	4.957	0.000	4.957	1.967	5.350	2.944	0.562	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Beginning in FY10, within PE 0207412F, partial funding was transferred from Project Number 485L to Project Number 5294 to continue development of the AN/TPS-75 replacement/updgrade, known as Three-Dimensional Expeditionary Long-Range Radar (3DELRR). This realignment of funding has moved the associated 3DELRR Evolutionary Upgrades, Program Support & Systems Engineering/Technical Support to a separate Project Number (5294).

A. Mission Description and Budget Item Justification

The Control and Reporting Center (CRC) program element provides development and modernization of mobile ground-based command and control (C2) capabilities. The CRC is a ground-based theater air control system (TACS) surveillance and battle management command and control (BMC2) element. It consists of facilities, equipment, and people. It is a tailorable, modular, transportable, sustainable, and persistent weapon system employed at the tactical level to support air and surface operations. The CRC projects include development of Theater Air Control Systems Improvement (TACSI) capabilities and the Three-Dimensional Expeditionary Long-Range Radar (3DELRR). Currently USAF CRCs are fully employed in Operations IRAQI FREEDOM, ENDURING FREEDOM, and NOBLE EAGLE.

The TACSI project develops and modernizes software and hardware to make the CRC a viable BMC2 element. These efforts include, but are not limited to, the development and modernization of the AN/TYQ-23 Operations Module (OM) and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS). AN/TYQ-23 OM is a low source/high demand (LS/HD) rapidly deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace picture necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based battle management C2 operators located in the OM of the CRC. OMs and RRSVS units are currently deployed world-wide in support of ongoing operations.

In the absence of a replacement C2 system, Service Life Extension Program (SLEP) efforts to provide capability upgrades/improvements such as associated Mode 5 passive and/or active Identify Friend or Foe (IFF), are being developed for the CRC. Beginning in FY11, activities will include, but not be limited to, studies, analysis, design and prototype, documentation, testing, and production to support both current program planning and execution and future program planning.

The program is in Budget Activity 7 because it provides funding for the modernization of currently existing and operating systems.

	ONGE/ (OOII IEB					
Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Feb	ruary 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207412F: Control and Reportin (CRC)	g Center	PROJECT 67485L: Th (TACSI)	eater Air Col	ntrol System	Imp
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue upgrades to CRC to include advanced (MCS) upgrades, enhanced radio/radar/data link remoting, integratisen		13.249	2.679	4.298	0.000	4.298
FY 2009 Accomplishments: In FY 2009: 3DELRR TD Phase contracts awarded, conducted Review, delivered independent life cycle cost estimates, development of the continued 3DELRR Risk Reduction efforts to include, but not listate-of-the-art for High Power Amplifiers, for a cost based trace COTS parts & benefits to a mobile radar system; development of remote HF and SATCOM radio software to provide operator RRSVS; continued development of AN/TYQ-23 V5 SLEP Proteon broad range of technical research and analysis for requirem recapitalization of current and future CRC C2.	pped Milestone B documentation; mited to, studies for investigating de analysis, and for unique uses of of new radio interfaces, development is ability to remotely control radios in otype; develop reports and documents					
FY 2010 Plans: In FY 2010: Continue development of remote HF and SATCON ability to remotely control radios in RRSVS; conduct Radio Report AN/TYQ-23 V5 SLEP Prototype, initial integration & drawing	placement Study; continue development					
FY 2011 Base Plans: In FY 2011: Continued development & delivery of software upglimited to, develop designs for next increment of RRSVS & red server software to operate on a Linux based operating system; AN/TYQ-23 V5 SLEP Prototype and redline drawing package;	esign remote control terminal and continue development & delivery of					
FY 2011 OCO Plans: In FY 2011 OCO: N/A						

UNCLASSIFIED

R-1 Line Item #148 Page 4 of 23

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Febr	uary 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207412F: Control and Reporting (CRC)	ng Center	PROJECT 67485L: Th (TACSI)	T Theater Air Control System Imp			
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
MAJOR THRUST: Test and evaluation support		0.110	0.200	0.200	0.000	0.200	
FY 2009 Accomplishments: In FY 2009: Test and evaluation to include, but not limited to, properational feasibility demonstration at 133rd TS of Remote H							
FY 2010 Plans: In FY 2010: Test and evaluation to include, but not limited to, the lab acceptance test, formal acceptance test, developmental test.							
FY 2011 Base Plans: In FY 2011: Test and evaluation to include, but not limited to, per changes associated with new radios and transport technology AN/TYQ-23 V5 SLEP Prototype.	• • • •						
FY 2011 OCO Plans: In FY 2011 OCO: N/A							
MAJOR THRUST: Continue Program Support in support of multiple	e TACSI projects	0.858	0.123	0.021	0.000	0.021	
FY 2009 Accomplishments: In FY 2009: Continue Program Support (i.e., travel, supplies, emultiple TACSI projects	equipment, miscellaneous) in support of						
FY 2010 Plans: In FY 2010: Continue Program Support (i.e., travel, supplies, emultiple TACSI projects	equipment, miscellaneous) in support of						

UNCLASSIFIED

R-1 Line Item #148 Page 5 of 23

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Feb	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207412F: Control and Reporting (CRC)	Center	PROJECT 67485L: Th (TACSI)	eater Air Co	ntrol System	Imp
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: In FY 2011: Continue Program Support (i.e., travel, supplies, equipultiple TACSI projects	uipment, miscellaneous) in support of					
FY 2011 OCO Plans: In FY 2011 OCO: N/A						
MAJOR THRUST: Continue Systems Engineering/Technical Support		4.471	0.515	0.438	0.000	0.438
FY 2009 Accomplishments: In FY 2009: Continue Systems Engineering/Technical Support						
FY 2010 Plans: In FY 2010: Continue Systems Engineering/Technical Support						
FY 2011 Base Plans: In FY 2011: N/A						
FY 2011 OCO Plans: In FY 2011 OCO: N/A						

Accomplishments/Planned Programs Subtotals

18.688

3.517

4.957

4.957

0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0207412F: Control and Reporting Center	67485L: Th	eater Air Control System Imp
BA 7: Operational Systems Development	(CRC)	(TACSI)	

C. Other Program Funding Summary (\$ in Millions)

			<u>FY 2011</u>	<u>FY 2011</u>	<u>FY 2011</u>					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• PE 0207412F: Control and	10.206	17.459	20.231	0.000	20.231	25.177	33.682	29.601	24.476	0.000	0.000
Reporting Center, (OPAF)											

D. Acquisition Strategy

The CRC is utilizing an incremental development and acquisition strategy to further advance C2 capabilities supporting future aerospace operations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207412F: Control and Reporting Center (CRC)

PROJECT

67485L: Theater Air Control System Imp

(TACSI)

Product Development (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remote Radio Spiral 3	MIPR	AFRL Rome, NY	4.069	0.515	Dec 2009	0.550	Nov 2010	0.000		0.550	Continuing	Continuing	Continuing
Radio Replacement Study	MIPR	SPAWARSYSCEN Atlantic North Charleston, SC	0.000	0.188	Nov 2009	0.000		0.000		0.000	0.000	0.188	0.000
Mode 5 Upgrade - A	РО	309th Maintenance Wing Ogden ALC, UT	0.323	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Mode 5 Upgrade - B	TBD/TBD	TBD TBD	0.000	0.000		2.748	Dec 2011	0.000		2.748	0.000	2.748	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - A	TM	CSC Falls Church, VA	0.308	0.000		0.000		0.000		0.000	0.000	0.308	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - B	TBD/TBD	TBD TBD	0.000	0.175	Mar 2010	0.175	Mar 2011	0.000		0.175	0.000	0.350	0.000
Operations Modules (OMs) V5 Service Life Extension Program (SLEP) - C	PO	309th Maintenance Wing Ogden ALC, UT	0.957	1.625	Mar 2010	0.825	Mar 2011	0.000		0.825	Continuing	Continuing	Continuing
CRC Technology Opportunities & Resource Study (TORS)	TM	Booz Allen Hamilton, Inc. McLean, VA	1.711	0.176	Mar 2010	0.000		0.000		0.000	0.000	1.887	0.300

UNCLASSIFIED

R-1 Line Item #148 Page 8 of 23

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207412F: Control and Reporting Center (CRC)

PROJECT

67485L: Theater Air Control System Imp

(TACSI)

Product Development (\$ in Millions)

•	•	•											
				FY 2	010	FY 20 Bas		FY 2 OC		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CRC Technology Opportunities & Resource Study (TORS) Test Planning Support	MIPR	46TH TS Eglin AFB, FL	0.012	0.000		0.000		0.000		0.000	0.000	0.012	0.000
3DELRR Risk Reduction - A	MIPR	Naval Research Laboratory Washington, DC	0.545	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Risk Reduction - B	FFRDC	MIT/Lincoln Laboratory Lexington, MA	1.887	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Test Planning	MIPR	46TH TS Eglin AFB, FL	0.092	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Technology Demonstration - A	C/FFP	Lockheed Martin Corp, MS2 Radar Systems Liverpool, NY	4.858	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Technology Demonstration - B	C/FFP	Sensis Corp East Syracuse, NY	4.857	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
3DELRR Analysis of Alternatives	ТМ	Booz Allen Hamilton Inc McLean, VA	0.035	0.000		0.000		0.000		0.000	0.000	0.035	0.000
Congressional Recission from Control & Reporting Center	TBD/TBD	TBD TBD	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
		Subtotal	19.654	2.679		4.298		0.000		4.298			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207412F: Control and Reporting Center (CRC)

PROJECT

67485L: Theater Air Control System Imp

(TACSI)

Product Development (\$ in Millions)

				FY 2	2010		2011 ase		2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

The Department of Defense Appropriations Act for FY2010 (signed 19 Dec 09), established a -\$15M rescission in FY09 RDT&E funding within PE 0207412F.

Support (\$ in Millions)

				FY 2	2010	FY 2 Ba		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	Various/ Various	Various Various	2.297	0.123	Oct 2009	0.021	Oct 2010	0.000		0.021	Continuing	Continuing	Continuing
Systems Engineering	FFRDC	MITRE Bedford MA	6.990	0.000	Oct 2009	0.240	Oct 2010	0.000		0.240	Continuing	Continuing	Continuing
Technical Support	TM	Various Various	7.513	0.515	Dec 2009	0.198	Dec 2010	0.000		0.198	Continuing	Continuing	Continuing
		Subtotal	16.800	0.638		0.459		0.000		0.459			

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development

PE 0207412F: Control and Reporting Center

67485L: Theater Air Control System Imp

(CRC)

(TACSI)

Test and Evaluation (\$ in Millions)

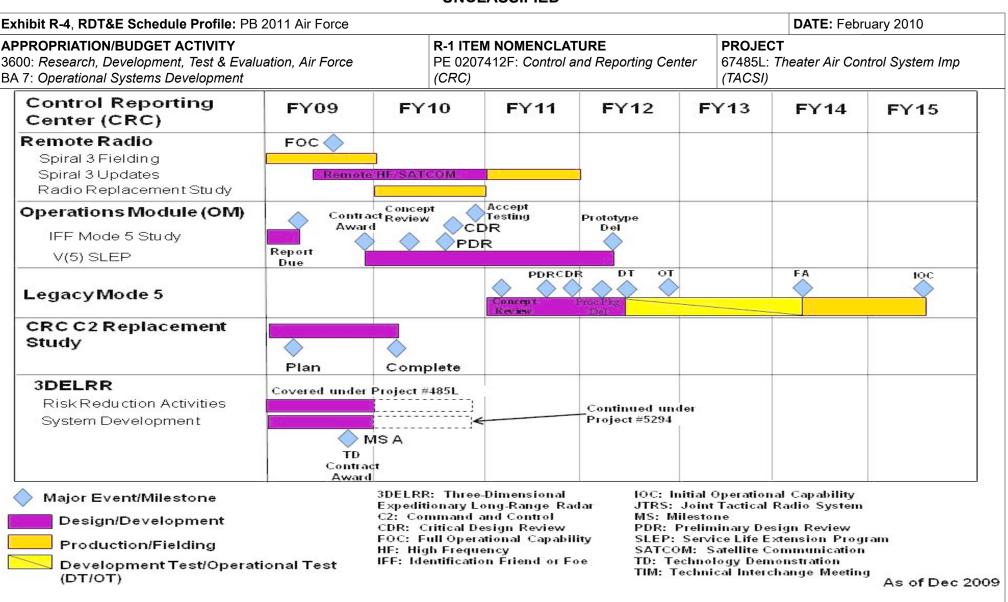
			FY 2	010	FY 2 Ba		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
46th Test Wing/Other Test Activity	Various/ Various	Various Various	0.648	0.200	Jan 2010	0.200	Jan 2011	0.000		0.200	0.000	1.048	0.591
		Subtotal	0.648	0.200		0.200		0.000		0.200	0.000	1.048	0.591

Remarks

	Total Prior Years Cost	FY 2010	FY 2 Ba	-	FY 2	-	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.102	3.517	4.957		0.000		4.957			

Remarks

Total Prior Years Cost may include only FY 2009 data.



UNCLASSIFIED

R-1 Line Item #148 Page 12 of 23

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0207412F: Control and Reporting Center	67485L: Th	eater Air Control System Imp
BA 7: Operational Systems Development	(CRC)	(TACSI)	

Schedule Details

	Sta	End		
Event	Quarter	Year	Quarter	Year
Remote Radio Spiral 3 Fielding FOC	3	2009	3	2009
Remote Radio Spiral 3 HF/SATCOM IOC Design/Development	3	2009	4	2010
Remote Radio Spiral 3 Updates Fielding	1	2011	4	2011
Remote Radio - Radio Replacement Study	1	2010	4	2010
OM IFF Mode 5 Study	1	2009	2	2009
Mode 5 Legacy Concept Review	1	2011	3	2011
Mode 5 Legacy PDR	3	2011	3	2011
Mode 5 Legacy CDR	4	2011	4	2011
OM v(5) SLEP Contract Award	4	2009	4	2009
OM v(5) SLEP Concept Review	2	2010	2	2010
OM v(5) SLEP PDR	3	2010	3	2010
OM v(5) SLEP CDR	3	2010	3	2010
OM v(5) SLEP Acceptance Testing	4	2010	4	2010
OM v(5) SLEP Design & Development	1	2010	4	2011
CRC C2 Replacement Study	1	2009	1	2010
3DELRR Risk Reduction	1	2009	4	2009
3DELRR Technology Development (TD) Phase	3	2009	4	2009
3DELRR TD Phase Contract Awards	3	2009	3	2009

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

BA 7: Operational Systems Development

DATE: February 2010

R-1 ITEM NOMENCLATURE
PE 0207412F: Control and Reporting Center (CRC)

(CRC)

(TACSI)

	St	Start			
Event	Quarter	Year	Quarter	Year	
3DELRR Milestone A	3	2009	3	2009	

Exhibit R-2A, RDT&E Project Ju	ıstification: P	B 2011 Air F	orce						DATE: Feb	ruary 2010		
APPROPRIATION/BUDGET ACT 3600: Research, Development, To BA 7: Operational Systems Devel	est & Evaluatio	n, Air Force			IOMENCLA 2F: <i>Control a</i>		g Center		PROJECT 675294: Theater Air Control System Improvement - Radar (TACSI-R)			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
675294: Theater Air Control System Improvement - Radar (TACSI-R)	0.000	48.660	53.356	0.000	53.356	62.848	61.853	65.147	20.756	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			

A. Mission Description and Budget Item Justification

The 3DELRR program is developing a replacement for the current legacy AN/TPS-75 radar. 3DELRR will be the principal USAF long-range, ground-based sensor for detecting, identifying, tracking, and reporting aircraft and missiles in support of the Joint Forces Air Component Commander (JFACC) through the Ground Theater Air Control System (GTACS). The primary mission of the 3DELRR will be to provide long-range surveillance, control of aircraft, and theater ballistic missile detection and Combat Identification (CID). The 3DELRR will respond to the operational need to detect and report highly maneuverable, small radar cross section targets to enable battlespace awareness while at the same time mitigating the reliability, maintainability, and sustainability issues plaguing the AN/TPS-75 radar system. The 3DELRR will provide air controllers with a precise, real-time air picture of sufficient quality to conduct close control of individual aircraft under a wide range of environmental and operational conditions. In the case of theater missile defense operations, the 3DELRR will have the capability to detect, track, and disseminate target information to respective command and control nodes such as the CRC to disseminate for warning and engagement. Similarly, the joint targeting process will benefit from trajectory information provided by the 3DELRR, which will include launch and impact location.

In FY11, the 3DELRR continues its risk reduction and Technology Development (TD) Phase, including maturation of Critical Technology Elements (CTEs), design options analysis, requirements refinement, life-cycle cost estimate revision, and Milestone B (MS-B) documentation development. The Program Office will conduct Preliminary Design Reviews (PDRs), Competitive Prototype Demonstrations and other verification of Technology Readiness Level (TRL) 6 for all CTEs used in the contractors' proposed design, and insure the collection of information required for the Government to produce the required documentation for MS-B, including approved Technical Requirements Document. Successful completion of PDR(s) and completion of the direction in the Acquisition Decision Memorandum (ADM) are milestones for entry into the Program Definition Risk Reduction (PDRR) phase. The Program Office also anticipates completing a full and open competition source selection and will award the contract to commence PDRR.

B. Accomplishments/Planned Program (\$ in Millions)

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Febr	uary 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207412F: Control and Reportin (CRC)	PE 0207412F: Control and Reporting Center 675294:					
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
MAJOR THRUST: Technical development (TD) phase and Prelimi efforts associated with delivering a new long-range, ground-based		0.000	42.804	46.949	0.000	46.949	
FY 2009 Accomplishments: In FY 2009: N/A							
FY 2010 Plans: In FY 2010: Continue TD and risk reduction of 3DELRR. Ope be baselined, and emphasis will shift toward development and system design. 3DELRR acquisition activities during this phate Technology Elements (CTEs) to Technology Readiness Level studies, refine Life Cycle Costs Estimate, development of MS program risks, aid in development of Open Technology Development of Grant of the cycle costs and documentation, participation in Technology Readiness Assess	d risk reduction work leading toward a ase include, demonstration of Critical I (TRL) 6, performanced-based trade B documentation, analyze & identify opment (OTD) standards; continued risk COTS parts study, development of MS B						
FY 2011 Base Plans: In FY 2011: Complete TD phase, including maturation of Critic options analysis, requirements refinement, life-cycle cost estir documentation development. Initiate PDRR activities after co source selection. PDRR activities include conducting Source independent review of source selection documentation, development for the system, conducting System Functional Review (found in TRD, procure long lead items for production-representation).	mate revision, and Milestone B (MS-B) mpleting a full and open competition Selectin, conduct multi-functional opment of representative operational use (SFR) using system's functional baseline						
In FY 2011 OCO: N/A							

UNCLASSIFIED

R-1 Line Item #148 Page 16 of 23

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: Feb	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207412F: Control and Reportin (CRC)	g Center				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: In FY 2009: N/A						
FY 2010 Plans: In FY 2010: Continue Program Support (i.e., travel, supplies, eq	uipment, miscellaneous)					
FY 2011 Base Plans: In FY 2011: Continue Program Support (i.e., travel, supplies, eq	uipment, miscellaneous)					
FY 2011 OCO Plans: In FY 2011 OCO: N/A						
MAJOR THRUST: Continue Systems Engineering/Technical Suppor	t	0.000	4.746	5.479	0.000	5.479
FY 2009 Accomplishments: In FY 2009: N/A						
FY 2010 Plans: In FY 2010: Continue Systems Engineering/Technical Support						
FY 2011 Base Plans: In FY 2011: Continue Systems Engineering/Technical Support						

Accomplishments/Planned Programs Subtotals

0.000

48.660

53.356

0.000

53.356

R-1 Line Item #148 Page 17 of 23

FY 2011 OCO Plans: In FY 2011 OCO: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0207412F: Control and Reporting Center	675294: Th	eater Air Control System
BA 7: Operational Systems Development	(CRC)	Improveme	nt - Radar (TACSI-R)

C. Other Program Funding Summary (\$ in Millions)

			FY 2011	<u>FY 2011</u>	<u>FY 2011</u>					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
PE Not Provided (16343):	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Activity Not Provided											

D. Acquisition Strategy

The Three-Dimensional Expeditionary Long-Range Radar (3DELRR) Project is using multiple full and open competitions to further advance C2 capabilities supporting battlefield command and control.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

_

R-1 ITEM NOMENCLATURE

PROJECT

3600: Research, Development, Test & Evaluation, Air Force

PE 0207412F: Control and Reporting Center

675294: Theater Air Control System Improvement - Radar (TACSI-R)

BA 7: Operational Systems Development

(CRC)

Product Development (\$ in Millions)

	·	·		FY 2011 FY 2010 Base					FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives	TM	Booz Allen Hamilton, Inc McLean, VA	0.000	1.340	Dec 2009	0.000		0.000		0.000	0.000	1.340	0.000
Risk Reduction - A	TBD/TBD	TBD TBD	0.000	9.408	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Risk Reduction - B	MIPR	Naval Research Laboratory Washington, DC	0.000	0.400	Nov 2009	0.000		0.000		0.000	0.000	0.400	0.000
Risk Reduction - C	FFRDC	MIT/Lincoln Laboratory Lexington, MA	0.000	3.330	Nov 2009	0.093	Nov 2009	0.000		0.093	Continuing	Continuing	Continuing
Risk Reduction - D	TM	Carnegie Mellon University Pittsburgh, PA	0.000	0.669	Dec 2009	0.000		0.000		0.000	0.000	0.669	0.000
Test Planning	MIPR	46th TS Eglin AFB, FL	0.000	0.290	Oct 2009	1.080	Oct 2010	0.000		1.080	0.000	1.370	0.000
System Threat Assessment	TM	MITRE Bedford, MA	0.000	0.300	Nov 2009	0.000		0.000		0.000	0.000	0.300	0.000
Technology Demonstration (TD) - A	C/FFP	Lockheed Martin Corp, MS2 Radar Systems Liverpool, NY	0.000	14.993	Dec 2009	0.000		0.000		0.000	0.000	14.993	24.851
Technology Demonstration (TD) - B	C/FFP	Sensis Corp East Syracuse, NY	0.000	12.075	Dec 2009	0.000		0.000		0.000	0.000	12.075	21.933
	TBD/TBD	TBD	0.000	0.000		45.580	May 2011	0.000		45.580	Continuing	Continuing	Continuing

UNCLASSIFIED

R-1 Line Item #148 Page 19 of 23

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207412F: Control and Reporting Center (CRC)

PROJECT

675294: Theater Air Control System Improvement - Radar (TACSI-R)

Product Development (\$ in Millions)

•	٠.	,											
				FY 2010		FY 2 Ba	2011 Ise	FY 2011 OCO					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Definition & Risk Reduction		TBD											
Government Furnished Equipment	TBD/TBD	TBD TBD	0.000	0.000		0.196	May 2011	0.000		0.196	0.000	0.196	0.000
		Subtotal	0.000	42.805		46.949		0.000		46.949			

Remarks

Support (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	Various/ Various	Various Various	0.000	1.110	Oct 2009	0.928	Oct 2010	0.000		0.928	Continuing	Continuing	Continuing
Systems Engineering	TM	MITRE Bedford, MA	0.000	2.239	Oct 2009	2.985	Oct 2010	0.000		2.985	Continuing	Continuing	Continuing
Technical Support	TM	Various Various	0.000	2.506	Dec 2009	2.494	Dec 2010	0.000		2.494	Continuing	Continuing	Continuing
	Subtotal 0.000		5.855		6.407		0.000		6.407				

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development

PE 0207412F: Control and Reporting Center (CRC)

675294: Theater Air Control System Improvement - Radar (TACSI-R)

Test and Evaluation (\$ in Millions)

		FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
46th Test Wing/Other Test Activity	Various/ Various	Various Various	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000
	_	Subtotal	0.000	0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2 Ba	FY 2	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	48.660	53.356	0.000	53.356			

Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

APPROPRIATION/BUDGET ACTIVITY

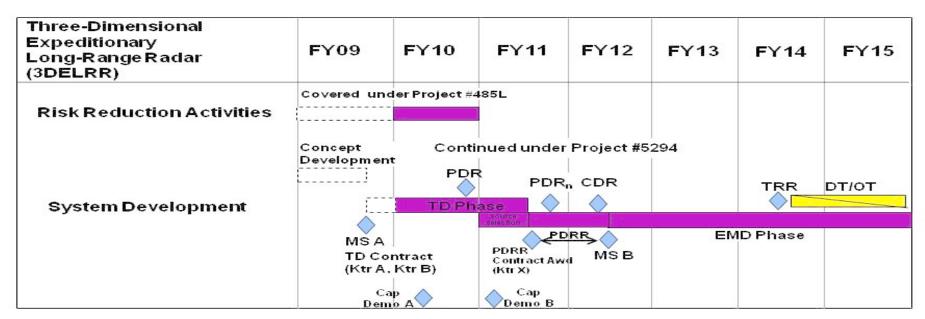
3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

BA 7: Operational Systems Development

DATE: February 2010

R-1 ITEM NOMENCLATURE
PE 0207412F: Control and Reporting Center (CRC)

PROJECT
675294: Theater Air Control System Improvement - Radar (TACSI-R)



In FY09, Three-Dimensional Expeditionary Long-Range Radar (3DELRR) was included as part of Project 485L, Theater Air Control System Improvement (TACSI).

Major Event/Milestone

Design/Development

Development Test/Operational Test (DT/OT)

EMD: Engineering and Manufacturing Development

Ktr: Contractor MS: Milestone

PDRR: Preliminary Design and Risk Reduction

TD: Technology Development TRR: Test Readiness Review

As of Dec 2009

R-1 Line Item #148 Page 22 of 23

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207412F: Control and Reporting Center (CRC)

PROJECT

675294: Theater Air Control System Improvement - Radar (TACSI-R)

Schedule Details

	St	art	End		
Event	Quarter	Year	Quarter	Year	
3DELRR On-going Risk Reduction (continued from Project 485L)	1	2010	4	2010	
3DELRR On-going System Development (continued from Project 485L)	1	2010	4	2011	
3DELRR TD Phase Capability Demo A	2	2010	2	2010	
3DELRR Preliminary Design Review (TD phase)	4	2010	4	2010	
3DELRR Preliminary Design Review (PDRR phase)	3	2011	3	2011	
3DELRR TD Phase Capability Demo B	1	2011	1	2011	
PDRR Source Selection	1	2011	3	2011	
3DELRR PDRR Contract Award	3	2011	3	2011	